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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,963	08/27/2003	Akira Matsunami	TI-35921 (032350.B519)	4707
23494	7590	03/17/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265				CAO, PHAT X
		ART UNIT		PAPER NUMBER
				2814

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/648,963	MATSUNAMI, AKIRA
	Examiner Phat X. Cao	Art Unit 2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 13 December 2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.  
 4a) Of the above claim(s) 1-15 and 23-28 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 16-22 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

## DETAILED ACTION

### ***Election/Restrictions***

1. Applicant's election of Group II, claims 16-22 in the reply filed on 12/13/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ball (US. 6,426,564).

Regarding claims 16 and 20, Ball (Fig. 8C) discloses a ball film 20 for fabricating integrated circuit 10 comprising: a thin film 20 comprising a plurality of slots 22; and a plurality of metal solder balls 16 (column 8, lines 8-10) each movably contained within a respective one of the plurality of slots 22.

Regarding claims 17-19, Ball further discloses that the slots 22 are spherically shaped (column 5, lines 21-24), and the thin film 20 is made of polyimide (column 6, lines 9-11) and formed from two separate thin films of material 50 and 56 (see Fig. 7 and column 7, lines 11-20).

4. Claims 16-18 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayes (US. 5,861,323).

Regarding claims 16 and 20, Hayes (Figs. 3-4) discloses a ball film 22 for fabricating integrated circuit (see abstract ) comprising: a thin film 22 comprising a plurality of slots 24; and a plurality of metal solder balls 86 (column 4, lines 12-13) each movably contained within a respective one of the plurality of slots 24.

Regarding claims 17 and 19, Hayes (Fig. 3) further discloses that the slots 24 are spherically shaped, and the thin film 22 is made of polyimide (column 3, lines 35-38).

Regarding claims 21-22, Hayes further discloses that the thin film 22 comprises a thickness of between 15 um and 125 um (column 3, lines 39-41), and the metal balls 86 each have a diameter of between 50 um and 800 um (column 3, lines 43-45).

Regarding claim 18, Hayes (Fig. 9) also discloses that the thin film is formed from two separate thin films of material 22 and 26.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 16-17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Cobbley et al (US. 6,551,917).

Cobbley (Fig. 9) discloses a ball film for fabricating an integrated circuit 20, comprising: a thin film 30 comprising a plurality of spherical slots 34A (not labeled in Fig. 9, see Fig. 1); and a plurality of metal solder balls 12 (column 4, lines 48-51) each movably contained within a respective one of the plurality of slots.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phat X. Cao whose telephone number is (571) 272-1703. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PC  
March 14, 2005

*Carmen M. H.*  
PHAT X. CAO  
PRIMARY EXAMINER